Chapter 5: Returns on Alternative Investments

In evaluating candidate trust replacement properties the department generally uses two approaches to value: market value and the investment value to the department or "department investment value".

The market value is an estimate of the value at which the candidate property would sell between a typical willing buyer and a typical willing seller on the current market. The estimated market value is determined by either a third party appraiser, or by a department appraiser, or by department staff trained in market investment valuation. Third party appraisals conform to the Uniform Standards of Professional Appraisal Practice (USPAP) and are completed by a state certified real estate appraiser.

Department investment value is an economic valuation of expected cash flow (revenues less costs) from the candidate property if acquired and managed by the department. Similarly, private investors evaluate investment opportunities based on their own unique set of investment criteria. Investment value can be expressed in terms of present value at a target discount rate or as a rate of return on the initial investment.

The department's internal Asset Management Council comprised of executive and senior policy and management staff provides strategic policy direction for the acquisition of each category of state trust lands and the various programs target candidate replacement properties based on these criteria. (See Appendix A "Asset Acquisition and Disposal Criteria" for detail.)

5.a Forest Land Acquisitions:

The Council has adopted the following preferred land characteristics to guide the department in acquiring replacement forest land:

1. While the department manages trust forest lands throughout the state, the investment focus generally is west of the Cascades, and properties that block up with existing state lands.
2. The department seeks properties suitable for long-term commercial forestry, in areas where the surrounding land uses are compatible with forest management.

3. The department seeks forest land with good productivity potential (Forest Soils Index Class I, II or III)
4. Most of the properties acquired are bare ground or have non-merchantable young trees.
5. Properties should meet real investment return of 5 percent or greater[14].

Since 1989 the department has spent $55 million in acquiring over 90 forest land properties as replacement trust lands, comprising almost 38,000 acres. A summary of the results of the investment analysis for forest land acquisitions made by the department since 1989 is shown in Table 10.

Market Valuation: When a forest property is identified as available for acquisition, the department first conducts a preliminary market valuation. The department may request a market appraisal in cases where the department judges that additional expertise is needed to adequately estimate the market value of the property. When a market appraisal is not completed the department does an investment analysis using standard industry assumptions to estimate the current market value of the property in forestry use.

The department uses the same methodology and software to estimate both the market investment value and the department investment value; the only difference is that key assumptions are changed where appropriate. Assumptions that may different between the market investment analysis and the department investment analysis include the discount rate, log values because of export restrictions, rotation age, and the difference between Forest Practices requirements, and the department's Forest Resource Plan and Habitat Conservation Plan (HCP) requirements.

The investment approach is used to estimate market value throughout the forest industry. When used properly, it is fast, accurate, timely, and cost effective. By comparing the results of department market investment analysis to market appraisals the department is able to test the assumptions being used to assure the department's model is giving comparable values to the market appraisal method.

To determine both the market and department investment value of land and immature forest stands, the department uses a computer model called BareInt 9.1. The model projects future costs and revenues for the candidate property if managed for timber production. The projected revenues and costs are based on the productivity of the site, anticipated management activities on the tract, projected growth and yield, and projected

[14] The department's choice of a lower discount rate than used by most private firms has been questioned. The lower discount rate is reflective of the permanent nature of the federally granted trusts and the trustees obligation not to unduly favor present beneficiaries over future beneficiaries. The higher the target rates of return, the less value future revenues are given relative to current revenue in the analysis. Public trust managers therefore generally use a lower discount rate than private organizations, which most often use their cost of capital, adjusted for financial risk. (See page 1, "Endowment Fund Reform and Idaho's State lands: Evaluating Financial Performance of Forest and Rangeland Assets", Wildlife and Range Policy Analysis Group Report No. 21, December 2001. See also Appendix B, Forest Resource Plan, Department of Natural Resources, July 1992)

log prices, harvest costs, and management costs. Future revenues and costs are then discounted back to the present to determine the net present value (NPV) of the projected cash flow for a single rotation.

The model (BareInt 9.1) then expands the NPV of the single rotation to an infinite number of rotations. The result is the estimated investment value of the property given the discount rate, expected management activities, and other assumptions used in the analysis. This is sometimes referred to as a soil or land (and reproduction) expectation value.

In evaluating candidate properties to estimate market investment value, department staff currently apply a real discount rate of 6.5 to 7 percent, an annual 1 percent real increase in both stumpage prices and costs. The assumed management parameters include Forest Practices Rules, and a rotation age of approximately 50 years. Starting log prices are a calculated rolling 24-month average based on both export and domestic log prices which are published monthly by Log Lines, a log price reporting service[15].

The estimated market values of replacement forest lands acquired by the department since 1989 are shown in column (5) of Table 10 with an asterisk (*) for those based on the department's market investment analysis. Market values not marked with an asterisk were based on an appraisal. The estimated market value of forest lands acquired by the department during the study period was $ 61.1 million, (see column (5) of Table 10) while the actual purchase price for those properties, shown in column (4), was $55.0 million.

Department Investment Valuation: The second valuation estimate done by the department is the department investment value. The department investment value is the estimated value of the candidate property to the department if managed for future timber harvests.

In evaluating candidate properties to estimate department investment value, department staff currently apply a real discount rate of 5 percent, and the same annual 1 percent real rate of price and cost increase used in the market investment analysis. The assumed management parameters include Forest Resource Plan policies (including a rotation age of 60 years), the Habitat Conservation Plan restrictions and where applicable Forest Practices Rules. Starting log prices are the same rolling 24-month average used in the market evaluation except based only on domestic log prices because of the log export restrictions.

For those properties with mature timber, the timber is valued at current market value (see column (6) of Table 10). Communication sites, savings specific to the management funds from exterior boundary survey reductions, reduced road cost, the value of improved access to existing trust lands, cost savings due to reduced potential development of the

[15] LOG LINES, P.O. BOX 2215, Mount Vernon, WA 98273

property as single family residents, and other non-timber attributes of candidate replacement properties may add investment value to the property. Examples inclu may include. Other values that were specifically identified for individual replacement forest land acquisitions are included in column (7) of Table 10. In the investment value analysis other values (such as potential communication sites, reduced boundaries, etc.) are treated like mature timber, as a one-time benefit at the time of purchase.

Real vs. Nominal Returns: The department uses real returns and real prices in evaluating its forestry investments since, over long periods of time, changes in price level can distort the rate of return on an investment like forestry. To determine the true rates of return on an investment in purchasing power, the analysis should be net of price change due to inflation.

Nominal or market rates of return are expressed in dollar or nominal terms that include inflationary increases in prices. The difference between real and nominal rates is the rate of inflation. The nominal rate of return equals the real rate of return plus the rate of inflation.

The real rate of return represents the productivity of the asset, in this case timberland, in real terms or the gain in purchasing power. Increases in inflation will increase the nominal rate of return while leaving the real rate unchanged. If inflation were zero then the real rate and the nominal rate would be the same.[16]

Projected Real Returns: A summary of the projected real investment returns is shown in Table 10. The total investment value to the department is the sum of the value of the mature timber (shown in column (6)), and the value of the land, immature timber, and other values (shown in column (7)). The total investment value to the department is shown in column (8) in Table 10. For those purchases made since FY 1989 the total department investment value was $83.7 million; this property was purchased for $55.0 million, which increased the projected present net value of the trust, or trust value by $28.7 million or 52 percent (See Column (9) of Table 10).

The real rate of return to the department on replacement trust forest land is shown in column (10) of Table 10. This is the discount rate at which the investment value is equal to the purchase price of the property. The average projected real rate of return for investments on replacement forest lands acquired by the department since 1989 is 6.0 percent. See bottom of column (10) Table 10.

Impact on Sustainable Harvest: When a property is considered for addition to a managed forest there may be impacts on timber harvest that extend beyond the timber grown on that property. Recall that most of the acres transferred out of trust ownership were off base from harvest and/or presented management challenges to the department. By contrast, the department has targeted forest lands that are easier to manage and fit into

[16] See page 149 of "The Handbook on fixed income securities" Edited by Frank J. Fabozzi (1991)

the trusts' existing working forests and sustainable harvest.[17] Thus, the purchase of replacement forest land not only provides revenues for future beneficiaries from the properties, the purchase of replacement forest land increases current harvest by increasing the sustainable harvest level.[18]

Sustainable harvest will increase if in some ownership groups there is an abundance of acres in some age classes and relatively few acres in other age classes. This means that the harvest may be delayed in age classes where there are relatively more acres in order to sustain the harvest while the age classes with less acres reach the minimum harvest age. By targeting land purchases in areas where the age class distribution is out of balance, the department can release timber for immediate harvest, and provide current revenue to the trust beneficiaries without reducing future harvests.

[17] In **RCW 79.68.040** the legislature directs the department to "manage the state-owned lands under its jurisdiction which are primarily valuable for the purpose of growing forest crops on a sustained yield basis." In **RCW 79.68.030** the legislature defines sustained yield as "harvesting on a continuing basis without major prolonged curtailment or cessation of harvest."

[18] In an unpublished study done by the department in 1999, lands transferred out of trust status reduced the sustainable harvest by 7.9 mmbf/yr. or $2.4 million per year at $300/mbf while replacement lands acquired increased the sustainable harvest by 13.1 mmbf/yr. or $3.9 million per year. The department is currently in the process of recalculating its sustainable harvest.

Table 10: INVESTMENT ANALYSIS OF PROJECTED RETURN ON REPLACEMENT TRUST LANDS ACQUIRED BY THE DEPARTMENT OF NATURAL RESOURCES FOREST LANDS

(1) Date of Acquisition	(2) Seller	(3) Acres	(4) Purchase Price	(5) Market Value {1}		(6) Value of Mature Timber	(7) Investment Value Land & Reprod {2}	(8) Total Investment Value [(8)=(6)+(7)]	(9) Change in Trust Value [(9)=(8)-(4)]	(10) Projected Real Return on Investment	(11) Trust {3}	
Nov-01	Lincoln Timber	120	$ 121,000	$ 121,000	*		$ 182,621	$ 182,621	$ 61,621	5.7%	CS	
Sep-01	Plum Creek	1,293	$ 4,615,000	$ 4,963,444		$ 3,016,676	$ 2,357,864	$ 5,374,540	$ 759,540	5.8%	CS	
Jul-01	Mason Timber	227	$ 235,000	$ 360,464	*		$ 334,523	$ 334,523	$ 99,523	6.5%	CS	
Apr-01	Carlsen	40	$ 115,000	$ 115,000	*		$ 114,151	$ 114,151	$ (849)	5.0%	CS	
Jul-00	Duval	190	$ 380,000	$ 380,000	*		$ 425,500	$ 425,500	$ 45,500	5.4%	CS	
Jul-00	M & R	160	$ 371,000	$ 408,100	*	$ 91,445	$ 279,510	$ 370,955	$ (45)	5.0%	CS	
Jun-00	Southworth	616	$ 3,300,000	$ 3,510,000		$ 1,440,000	$ 2,332,100	$ 3,772,100	$ 472,100	5.4%	CS	
May-00	Hauck	63	$ 215,000	$ 215,000		$ 142,000	$ 240,195	$ 382,195	$ 167,195	5.7%	CS	
Feb-00	Phillips	475	$ 1,950,000	$ 1,942,500		$ 885,000	$ 1,324,571	$ 2,209,571	$ 259,571	5.4%	CS, CC	{4}
Jan-00	Peterson	5	$ 70,000	$ 71,700	*	$ 53,000	$ 29,553	$ 82,553	$ 12,553	5.0%	CS	
Jan-00	Peninsula CC	29	$ 49,000	$ 62,370		$ 14,700	$ 32,829	$ 47,529	$ (1,471)	4.9%	CS	
Sep-99	BCEL	160	$ 600,000	$ 650,000			$ 576,525	$ 576,525	$ (23,475)	4.8%	CS	
Jul-99	Wells	160	$ 170,000	$ 183,700	*		$ 241,000	$ 241,000	$ 71,000	5.9%	CS	
Dec-98	Timber Services	90	$ 126,200	$ 126,500	*		$ 214,000	$ 214,000	$ 87,800	6.4%	CS	
Jan-99	Reid	26	$ 210,000	$ 220,000	*	$ 196,300	$ 56,610	$ 252,910	$ 42,910	6.2%	CS	
Oct-98	Winney	1,424	$ 1,850,000	$ 2,647,000		$ 370,000	$ 1,864,360	$ 2,234,360	$ 384,360	5.3%	CS	
Sep-98	Willapa	530	$ 545,000	$ 559,000			$ 797,110	$ 797,110	$ 252,110	6.0%	CS	
Jun-98	Balmelli	152	$ 113,000	$ 102,500	*		$ 185,543	$ 185,543	$ 72,543	5.9%	CS	
May-98	Weller	7	$ 13,000	$ 29,900			$ 28,962	$ 28,962	$ 15,962	NA	CEPRI	
May-98	Yaun	23	$ 46,000	$ 46,000		$ 16,000	$ 58,900	$ 74,900	$ 28,900	4.4%	CS	
Feb-98	Tri Mountain	160	$ 86,000	$ 87,400			$ 230,000	$ 230,000	$ 144,000	6.6%	CS	
Oct-97	Winkler	81	$ 100,000	$ 152,500			$ 101,100	$ 101,100	$ 1,100	5.0%	CS	
Oct-97	Zulch	56	$ 88,850	$ 126,530			$ 139,444	$ 139,444	$ 50,594	5.8%	CS	
Sep-97	Lou	52	$ 150,000	$ 190,000			$ 203,600	$ 203,600	$ 53,600	4.6%	CS	

Table 10: INVESTMENT ANALYSIS OF PROJECTED RETURN ON REPLACEMENT TRUST LANDS
ACQUIRED BY THE DEPARTMENT OF NATURAL RESOURCES
FOREST LANDS

(1) Date of Acquisition	(2) Seller	(3) Acres	(4) Purchase Price	(5) Market Value {1}		(6) Value of Mature Timber	(7) Investment Value Land & Reprod {2}	(8) Total Investment Value [(8)=(6)+(7)]	(9) Change in Trust Value [(9)=(8)-(4)]	(10) Projected Real Return on Investment	(11) Trust {3}	
Dec-97	Nooksack	523	$ 290,000	$ 290,000			$ 373,100	$ 373,100	$ 83,100	5.4%	CS	
Jun-97	Omak	1,520	$ 1,000,000	$ 1,245,000		$ 280,000	$ 965,000	$ 1,245,000	$ 245,000	5.5%	CS	
Jan-97	Cocke	4	$ 4,200	$ 4,200	*	$ 1,000	$ 5,000	$ 6,000	$ 1,800	6.1%	CS	
Jan-97	Sutterfield	358	$ 1,010,000	$ 1,062,050		$ 29,750	$ 1,608,787	$ 1,638,537	$ 628,537	6.2%	CS	
Oct-96	Back Acres	140	$ 190,000	$ 220,000		$ 88,100	$ 375,470	$ 463,570	$ 273,570	7.1%	CS	
Oct-96	Wolff	41	$ 21,000	$ 21,000		$ 7,000	$ 100,760	$ 107,760	$ 86,760	8.0%	CS	
Jul-96	Aloha - Sumas	1,494	$ 2,200,000	$ 2,382,600		$ 1,250,000	$ 2,624,150	$ 3,874,150	$ 1,674,150	6.7%	CS	
Jun-96	Hefley	27	$ 70,500	$ 82,000		$ 36,000	$ 50,043	$ 86,043	$ 15,543	7.0%	CS	{5}
Apr-96	TWP	110	$ 136,000	$ 140,000			$ 224,200	$ 224,200	$ 88,200	6.0%	CS	{6}
Apr-96	Reed	40	$ 31,000	$ 31,000	*		$ 140,709	$ 140,709	$ 109,709	8.4%	CS	
Jan-96	Beamis	80	$ 171,000	$ 171,000			$ 524,000	$ 524,000	$ 353,000	6.3%	CS	
Dec-95	Aloha Lumber	286	$ 369,200	$ 482,050		$ 91,000	$ 865,500	$ 956,500	$ 587,300	7.1%	CS	{7}
Nov-95	Del Guzzi	165	$ 175,000	$ 179,225		$ 75,725	$ 202,431	$ 278,156	$ 103,156	8.1%	CS	
Aug-95	Cleggov	1,853	$ 2,067,250	$ 2,913,831	*	$ 1,380,900	$ 4,654,792	$ 6,035,692	$ 3,968,442	10.2%	CS	
Jul-95	Seaman	35	$ 47,000	$ 62,400		$ 4,582	$ 52,786	$ 57,368	$ 10,368	5.2%	CS	
Aug-95	Longview Fibre	39	$ 30,000	$ 31,350			$ 121,450	$ 121,450	$ 91,450	7.8%	CS	
Jun-95	Rue Creek	80	$ 851,000	$ 888,300		$ 799,000	$ 180,000	$ 979,000	$ 128,000	7.0%	CS	
Jun-95	Willapa	4,223	$ 10,613,000	$ 11,352,000		$ 6,852,000	$ 16,096,000	$ 22,948,000	$ 12,335,000	8.0%	CS, CB	
Feb-95	Pierce	10	$ 97,750	$ 98,450		$ 86,000	$ 38,232	$ 124,232	$ 26,482	8.2%	CS	
Mar-95	Fall Creek	121	$ 117,000	$ 120,600			$ 396,583	$ 396,583	$ 279,583	7.9%	CS	
Nov-94	Goode	26	$ 120,000	$ 190,000		$ 179,000	$ 32,668	$ 211,668	$ 91,668	7.8%	CS	
Dec-94	So. Wash.	276	$ 729,800	$ 729,590		$ 394,300	$ 558,284	$ 952,584	$ 222,784	5.5%	CS	
Oct-94	Oso	141	$ 210,000	$ 209,150		$ 157,000	$ 253,861	$ 410,861	$ 200,861	6.2%	CS	
Oct-94	Keda	186	$ 103,000	$ 123,600		$ 42,000	$ 249,124	$ 291,124	$ 188,124	7.5%	CS	
Aug-94	Rodway	10	$ 6,000	$ 6,000			$ 20,156	$ 20,156	$ 14,156	7.1%	CS	
Jun-94	Forks	1,676	$ 2,200,000	$ 2,216,000		$ 690,000	$ 3,012,733	$ 3,702,733	$ 1,502,733	6.2%	CS	
Jun-94	Johnson	40	$ 20,000	$ 20,100			$ 30,058	$ 30,058	$ 10,058	5.7%	CS	

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(1) Date of Acquisition	(2) Seller	(3) Acres	(4) Purchase Price	(5) Market Value {1}		(6) Value of Mature Timber	(7) Investment Value Land & Reprod {2}	(8) Total Investment Value [(8)=(6)+(7)]	(9) Change in Trust Value [(9)=(8)-(4)]	(10) Projected Real Return on Investment	(11) Trust {3}	
Feb-94	E Big Lake	212	$ 208,000	$ 209,185			$ 208,000	$ 208,000	$ -	5.0%	CS	
Feb-94	Mashel	50	$ 31,500	$ 31,825		$ 10,500	$ 55,406	$ 65,906	$ 34,406	6.7%	CS	
Feb-94	Debriae	68	$ 200,000	$ 213,566		$ 169,400	$ 44,166	$ 213,566	$ 13,566	5.6%	CS	
Nov-93	Kurtz	160	$ 112,000	$ 115,200			$ 194,963	$ 194,963	$ 82,963	6.0%	CS	
Apr-93	ITT	2,259	$ 1,300,000	$ 1,330,000		$ 155,000	$ 1,175,000	$ 1,330,000	$ 30,000	5.0%	CS	
Feb-93	Shaudys	20	$ 22,250	$ 23,000	*		$ 22,250	$ 22,250	$ -	5.0%	CS	
Feb-93	Meek	240	$ 92,000	$ 94,000			$ 92,000	$ 92,000	$ -	5.0%	CS	
Jan-93	Peninsula	309	$ 605,000	$ 605,000			$ 605,000	$ 605,000	$ -	5.0%	CS	
Oct-92	Hammond	20	$ 13,800	$ 14,950			$ 13,800	$ 13,800	$ -	5.0%	CS	
Apr-93	McCain	30	$ 19,500	$ 20,250			$ 19,500	$ 19,500	$ -	5.0%	CS	
Mar-93	Plum Creek	75	$ 23,004	$ 25,250			$ 54,600	$ 54,600	$ 31,596	6.5%	CS	
Jul-92	Zuvich	47	$ 44,000	$ 49,400			$ 62,430	$ 62,430	$ 18,430	5.6%	CS	
May-92	Shaudys	87	$ 133,000	$ 141,700		$ 84,000	$ 141,700	$ 225,700	$ 92,700	6.9%	CS	
Mar-92	Olson	462	$ 201,500	$ 219,300			$ 369,413	$ 369,413	$ 167,913	6.1%	CS	
Jan-92	Willapa	92	$ 48,205	$ 44,620			$ 59,984	$ 59,984	$ 11,779	5.4%	CS	
Oct-91	Meek	472	$ 225,000	$ 225,000			$ 317,000	$ 317,000	$ 92,000	5.6%	CS	
Jun-91	Plum Creek	448	$ 2,100,000	$ 3,135,000		$ 1,951,000	$ 156,800	$ 2,107,800	$ 7,800	5.1%	CS, FB	{8}
Jun-91	TAT USA	5,128	$ 6,250,000	$ 6,672,000		$ 2,672,000	$ 4,014,000	$ 6,686,000	$ 436,000	5.2%	CS, FB	{9}
Jun-91	Bridgewater	200	$ 300,000	$ 285,800		$ 108,000	$ 361,200	$ 469,200	$ 169,200	6.1%	CS	
Apr-91	NDC	992	$ 540,192	$ 545,000			$ 517,200	$ 517,200	$ (22,992)	4.9%	CS	
Apr-91	Kilgore	40	$ 14,500	$ 17,320			$ 24,800	$ 24,800	$ 10,300	5.9%	CS	
Apr-91	Golden Spring	440	$ 306,000	$ 320,000			$ 383,675	$ 383,675	$ 77,675	5.4%	CS	
Mar-91	Zepp	276	$ 205,000	$ 208,000			$ 257,000	$ 257,000	$ 52,000	5.4%	CS	
Feb-91	Thayer	47	$ 14,000	$ 17,600			$ 20,800	$ 20,800	$ 6,800	5.7%	CS	
Nov-90	Jorgensen	252	$ 126,000	$ 132,000			$ 168,000	$ 168,000	$ 42,000	5.5%	CS	
Feb-90	Doubek	125	$ 74,350	$ 77,850			$ 74,350	$ 74,350	$ -	5.0%	CS	
Jun-90	Golden Spring	1,631	$ 705,350	$ 1,065,000			$ 725,806	$ 725,806	$ 20,456	5.1%	CS	
Feb-90	DaPaul	985	$ 390,400	$ 459,000			$ 731,200	$ 731,200	$ 340,800	6.1%	CS	

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(1) Date of Acquisition	(2) Seller	(3) Acres	(4) Purchase Price	(5) Market Value {1}	(6) Value of Mature Timber	(7) Investment Value Land & Reprod {2}	(8) Total Investment Value [(8)=(6)+(7)]	(9) Change in Trust Value [(9)=(8)-(4)]	(10) Projected Real Return on Investment	(11) Trust {3}	
Dec-89	Three Rivers	2,966	$ 2,271,700	$ 2,271,700	$ 204,000	$ 2,625,564	$ 2,829,564	$ 557,864	5.4%	CS	
Dec-89	Rulien	79	$ 28,000	$ 25,400 *		$ 40,700	$ 40,700	$ 12,700	5.7%	CS	
Total		**37,853**	**$55,003,001**	**$61,136,020**	**$24,022,378**	**$ 59,642,755**	**$ 83,665,133**	**$ 28,662,132**	**6.0%**		**{10}**

{1} Appraised values include 3rd party commercial appraisers and market valuations prepared by DNR appraisal staff. Values determined by investment analysis are marked with an asterisk (*).

{2} Values for investment analysis considered DNR management constraints in existence at the time of purchase and expected rates of return from 5% to 7% .

{3} CS = Common School, CEPRI = Charitable, Educational, Penal & Reformatory Institutions; FB = Forest Board; CB = Capitol Building, CC = Community & Technical College Reserve

{4} This puchase includes 25 acres valued at $200,000 acquired for the community college trust. That portion is technically not replacement property, but is included here

{5} Purchase includes $32,100 from RMCA for acquisition of a right of way.

{6} Purchase includes $32,000 from RMCA for acquisition of a right of way.

{7} Purchase includes $23,000 from RMCA for acquisition of a right of way.

{8} Purchase includes 100 acres valued at $235,000 to replace Forest Board property sold to State Parks per special legislation.

{9} Purchase includes 482 acres valued at $1,200,000 acquired for the community college trust, and 1376 acres valued at $1,457,000 acquired for the Forest Board.

{10} Average return on investment of based on weighted average. Figures were not available for every transaction.

5.b Agricultural Land Acquisitions:

The department's Asset Stewardship Council has developed the following set of characteristics to guide the department in acquiring agricultural lands[19]:

1. The investment focus for agricultural holdings is east of the Cascades.
2. The department seeks properties in strongly established diverse agricultural areas zoned for agricultural uses and prefers to avoid speculative markets or products.
3. Since properties are leased, they must be sufficiently productive and appropriately located to attract desirable lessees and allow them to make reasonable returns for themselves and the trusts.
4. Initial capitalization rates and internal rate of return should be commensurate with the land use.
5. Risk needs to be commensurate with probable returns. There is a traditional relationship between returns and risk. Given the long-term nature of the trusts and the common law duties of a trustee, the department avoids high-risk transactions.
6. To reduce market risk in this category of assets, the department is interested in diversity among the holdings, seeking a distribution of properties in diverse agricultural communities, precipitation zones and commodity markets, with an emphasis on crops that yield a higher profit per acre.
7. The department has identified specific characteristics for lands it would prefer to acquire for irrigated farming, dry land farming, and grazing use.

Irrigated agricultural lands preferable for acquisition are characterized as having good soils, slopes and an adequate growing season coupled with an adequate source of irrigation water. Preferred properties are served by a self-contained, independent (certificated/permitted) water source and delivery system(s), or located in an irrigation district that, in either case, can be managed and leased as an independent unit.

Dryland agricultural lands preferable for acquisition are characterized as having adequate soils and rainfall, and a proven track record in wheat and other dryland agricultural crop production.

Grazing lands preferable for acquisition are characterized as having healthy plant communities, access to stock water and water rights, multiple use and alternative use potential.

[19] See Appendix A for Asset council's "Asset Acquisition and Disposal Criteria."

Farmland investments have shown the potential for solid profits. According to a study by the California Public Employees Retirement System, returns on farmland, including income from crop sales and appreciation in land values more than held their own between 1970 through the end of the study period in 1998[20].

Since 1989 the department has acquired seven agricultural properties containing more than 1,100 acres valued at $2.5 million as replacement trust lands. A summary of these acquisitions is shown in Table 11. These purchases have consisted of lands with row crop, orchard and vineyard potential.

Investment analyses on agricultural property that are candidates for acquisition are based on projected cash flow in real dollars from the lease of the property. The department generally leases orchard and vineyard properties on a percent of the value of the harvest. The investment analyses are based on current prices. Orchard and vineyard crops start producing revenue from three to four years after planting and may not reach full production for three to five additional years. Because of these factors there usually is a significant start up period before full revenue production occurs which is factored into the analysis. It is important to note that the start up period for agriculture is significantly shorter than the length of a forest rotation, but longer than that for commercial properties.

Generally any improvements needed to prepare the property for planting are the responsibility of the lessee. Where capital improvements such as wells or irrigation lines will be paid by the state, these costs are included in the investment analysis and paid out of a capital appropriation from management funds.

The investment analysis is done for the length of the lease. The analysis assumes that the property reverts to the state unencumbered at the end of the lease period (with the exception of authorized leasehold improvements such as trees or vines). The reversion is valued at the current value of agricultural land for the anticipated crop. At the end of the lease the department may release the site for similar agricultural production, pursue leasing the property for a higher valued crop, or sell the property.

Based on the investment analysis done at the time the properties were acquired, they have a projected real return on investment averaging 10.5 percent. See Column (8) of Table 11.

Three of the four properties purchased prior to 1997 have been converted to orchard or vineyard. The fourth is currently under lease for row crops. Together these four

[20] The California Public Employees Retirement System (CalPERS) commissioned the study two years ago. CalPERS has decided to invest in the wine grape business. In partnership with a private investment firm, CalPERS will purchase land and develop vineyards in California, Washington and Oregon. Eighty percent of the $100 million investment will be in Napa, Sonoma, Mendocino and potentially the central Coast, with the remaining $20 million destined for vineyards in Washington and Oregon.

properties are currently producing $215,105 per year or a 13 percent yield on the original purchase price for those four properties.

"Andersen" was planted to wine grapes in 1997 and 1998 and is nearing full development. Current annual rent is 21 percent of the original purchase price.

"Val-Roz-Jenks" was planted to orchard in 1997 and 1998. The183 acres are now nearing full production. Current annual rent is 8 percent of the original purchase price.

"McQuery" is currently in interim use of irrigated crops of alfalfa hay, and corn. It has potential for conversion to apples or vineyards in 2004 or 2005. The current rent is 3.2 percent of the purchase price.

"Walla Walla" had its first planting of wine grapes in 2000. This planting has not yet entered production. Revenue is projected to increase to $16,000 per year at full production in 2005. An additional 40 acres suitable for grapes are under lease, 20 acres were planted this fall and the remaining 20 acres are to be planted next year. In addition the department has established a 40-acre wildlife reserve on the property.

The department recently purchased three new properties in the Goose Gap area – Davis, Szymczak, and Johnson. Davis currently is used to grow irrigated row crops. Conversion to grapes would release enough water to irrigate both Szymczak and Johnson. These properties are located near or adjacent to existing state lands under lease for wine grape production, and have excellent potential grape production. The department is currently negotiating with potential lessees.

The potential revenue from all the agricultural properties acquired by the department since 1989 is more than $420,900 per year or 16.8 percent of the original purchase price.

Table 11: INVESTMENT ANALYSIS OF PROJECTED RETURN ON REPLACEMENT TRUST LANDS ACQUIRED BY THE DEPARTMENT OF NATURAL RESOURCES AGRICULTURAL LANDS

(1) File	(2) Property Name	(3) Purchase Date	(4) Use at Time of Acquisition	(5) Acres Acq	(6) Total Purchase Price	Appraised Value {6}	(7) Purchase Price Per Acre	(8) Projected Real Return on investment {1}	(9) Current Use	(10) Current Income	(11) Current yield	(12) Potential Income	(13) Potential yield	(14) Trust {5}	
72946C	Davis	Dec-01	Agriculture	145	$598,125	-	$4,125	9.9%	Irrigated Ag	$10,427	1.7%	$56,000	9.4%	CS	{2}
72946B	Goose Gap	Nov-01	Agriculture	5	$16,000	-	$3,200	9.9%	Undeveloped	$0	0.0%	$2,000	12.5%	CS	{2}
72946A	Johnson	Sep-01	Agriculture	65	$208,000	-	$3,200	9.9%	Undeveloped	$0	0.0%	$24,800	11.9%	CS	{2}
100	Goose Hill	Jul-97	Grazing	120	$48,000	-	$400	10.0%	Vineyard/wildlif	$0	0.0%	$32,000	66.7%	CS	{3}
094	McQuery	Dec-96	Irr. Row Crops	237	$497,490	$575,000	$2,102	11.7%	Irrigated Ag	$15,924	3.2%	$63,600	12.8%	CS	{2}
080	Val-Roz-Jenks	Sep-95	Irr. Row Crops	190	$320,000	$340,000	$1,684	12.0%	Orchard	$25,754	8.0%	$67,500	21.1%	CS	
082	Andersen	Sep-95	Row Crops	392	$816,640	$860,000	$2,081	9.7%	Vineyard	$173,000	21.2%	$175,000	21.4%	CS	{4}
	Total			**1,154**	**$2,504,255**		**$2,170**	**10.5%**		**$225,105**	**9.0%**	**$420,900**	**16.8%**		

{1} Estimated return at time of purchase
{2} waiting for conversion to Orchard or vineyar
{3} the Department was able to reallocate unused water to this site. Improved access to existing trust property. Potential for development of a Cellular tower on the site. Reduces potential development of inholding.
{4} Original projection was based on orchard. Actual conversion was to vineyard. Current revenue is about twice what was originally projected.
{5} CS = Common School
{6} Where appraised value is not shown, price is based on internal investment valu

5.c Commercial Properties Acquisitions:

The department's Asset Stewardship Council has developed the following set of characteristics to guide the department in acquiring commercial properties[21]:

1. The department acquires commercial real estate assets in order to achieve immediate attractive revenue streams for the trusts and diversify a portfolio, which is dominated by timber assets.

2. The department seeks institutional grade investments that will generate stable income with low to moderate levels of risk because of the long-term nature of the trusts and the duties of a trustee.

3. The department avoids single or multi-family residential investments, out of state investments and high-risk properties or tracts with high management costs.

4. Instead, the preferred acquisitions are commercial properties with well-constructed high quality buildings, with appreciation potential and reliable commercial or retail tenants.

In 1984 the legislature authorized the department to dispose of unmanageable (nonresource) trust land in urban areas and acquire replacement properties for income production. In the 1988 Transition Lands Policy Plan and the Asset Stewardship Plan, the Board of Natural Resources affirmed the importance of asset value diversification and the role of the commercial real estate asset class in a balanced portfolio. The board has made the acquisition of commercial lands an important component of the department's strategy to diversify the Trusts' assets.

The objective of the department's commercial lands program is to use the exchange, land bank, real property replacement, and other tools given the department by the legislature to identify and convert non-revenue generating, high value uplands (transition land) into a dependable and long-term revenue stream for the trusts. To achieve this objective the department seeks appropriate commercial real estate for exchange or acquisition that provides:

1. Stable annual current revenue
2. Potential for attractive long term yields through appreciation, and

[21] See Appendix A for Asset council's "Asset Acquisition and Disposal Criteria."

3. Diversification of the current portfolio.

Because of the size of each acquisition, the department contracts with independent third-party appraisers on each acquisition to value the department's investments in commercial properties at the time of purchase. These professional appraisers rely on several techniques to establish market value, including the investment value analysis or what the appraisers call the income capitalization approach to value.

In the income capitalization approach, the appraiser projects the current and future income and expenses associated with the property over a holding period, generally assumed to be 10 years for commercial properties. The assumptions used depend on the characteristics of the property and market conditions in the area and any existing or proposed lease language**.** Increases in market rents are projected based on expected market conditions and lease terms and generally are expected to keep pace with inflation.

Cost allowances for leasing commissions and new tenant remodeling alterations are included in the appraiser's expense assumptions. These costs are paid for out of the resource management cost account (RMCA). The tenant pays ordinary expenses for repairs and maintenance of the properties.

The sale value of the property at the end of the 10-year period (reversion) is estimated based on expected growth in the rents and the remaining useful life of the property. The return on investment is based on the annual net cash flow and reversion value of the subject property. The department's planned exit strategy for when to sell a particular investment uses a typical 10-year holding period as a guide, however the actual disposal date will depend on market conditions.

The expected return for each project is shown in column (11) of Table 12. The weighted (weighted by the size of the project) average expected return on investment for all the projects is 10.1 percent. This is a nominal return and must be adjusted for the expected rate of inflation to make it comparable to the expected returns on forest and agricultural land investments. (See Table 16.)

Since 1989, the department has purchased seven commercial properties at a total purchase cost of just over $69 million. See Table 12 for detail. The weighted average initial yield (initial rent divided by the purchase price) on these properties was 8.7 percent (bottom of column (8)). The average current yield (current rent divided by the initial purchase price) is 9.3 percent (bottom of column (10)). This return should increase as the properties appreciate in value and the rents are renegotiated, typically on a three to five year cycle.

Table 12: INVESTMENT ANALYSIS OF PROJECTED RETURN ON REPLACEMENT TRUST LANDS ACQUIRED BY THE DEPARTMENT OF NATURAL RESOURCES COMMERCIAL PROPERTY ACQUISITIONS

As of June 2002

(1) File Number	(2) Name of Property	(3) Date Acquired	(4) Acres Acquired	(5) Appraised Value at time of Acquisition	(6) Purchase Price	(7) Initial Annual Rent	(8) Initial Yield	(9) Current Annual Rent	(10) Current Yield	(11) Projected Nominal Return on investment	(12) Trust {7}	
72712	Walgreen Store Mukilteo, WA	02/05/02	2.50	$5,400,000	$5,400,000	$442,800	8.2%	$446,000	8.2%	8.2%	CS, SS, CEPRI, Univ	{2}
71666	Fred Meyer Parcel Issaquah, WA	04/03/01	12.00	$15,000,000	$15,000,000	$1,185,000	7.9%	$1,177,322	7.8%	8.7%	CS	{3}
70793	Creekview Building Bothell, WA	01/05/99	4.21	$7,000,000	$7,000,000	$602,000	8.6%	$602,000	8.6%	11.0%	CS	{4}
054	Boulevard Center Tacoma, WA	06/07/94	8.60	$17,300,000	$17,300,000	$1,557,000	9.0%	$1,638,115	9.5%	10.5%	CS	
051	Kmart Store Wenatchee, WA	12/01/92	9.01	$6,450,000	$6,450,000	$622,425	9.7%	$622,698	9.7%	10.0%	CS	
050	I-90 Lake Place Issaquah, WA	10/02/90	8.27	$17,900,000	$17,900,000	$1,611,000	9.0%	$1,928,000	10.8%	11.0%	CS	{5}
Total			**44.59**		**$69,050,000**	$6,020,225	**8.7%**	**$6,414,135**	**9.3%**	**10.1%**		

{1} Rent (above) are net of expenses to the lessee.
{2} Transaction involved $4,187,000 cash and $1,213,000 of Trust Land exchange parcels.
{3} Transaction involved $8,008,496 cash and $6.991,504 of Trust Land exchange parcels.
{4} Transaction involved $4,300,000 cash and $2,700,000 of Trust Land exchange parcels.
{5} Transaction involved $10,000,000 from land bank and $7,900,000 from Park Land Trust revolving fund.
{6} Percent shown in Total row are wieghted average of all projects
{7} CS = Common School, SS = Scientific School (WSU), CEPRI = Charitable, Educational, Penal and Reformatory Institutions, Univ = University-Original (UW).

5.d Permanent Fund Investments:

The five permanent funds established at statehood are the Common School, Normal School, Agricultural, Scientific University, and State University permanent funds. These Trust funds support the following educational institutions, respectively, the common schools, the state's four regional universities, Washington State University (both Scientific and Agricultural) and the University of Washington. There are no permanent funds for the CEP&RI, Capitol, or forest board trusts. Revenues from the sale of land and nonrenewable resources from the portion of the CEP&RI designated for support of the University of Washington are deposited in the University Permanent Fund.

Permanent funds are non-expendable trust funds in which the investment principal (corpus) remains intact as required by Washington's Enabling Act, State laws and regulations; only investment earnings can be distributed to the beneficiaries. By law, the assets of the permanent funds are invested in fixed income securities and short-term holdings with the exception of the Common School Permanent Fund, a portion of which may be invested in equities[22]. Currently less than 5 percent of the Common School's Permanent Fund or 1 percent of all the Permanent Funds' assets are invested in the U.S. Equity Market Index Fund.

Some terms commonly used in fixed income investments are listed below along with their definitions as used in this report[23]:

1. Issuance – A bond's date of issuance is the date on which the bond is created.
2. Maturity – A bond's maturity date is the date on which the agreement will cease and the issuer will redeem the security by returning the par value to the investor. The life of a bond is the time from issuance until the date of maturity.
3. Par value – A bond's value that will be returned to the bondholder at maturity[24].
4. Coupon return – A bond's coupon return is the fixed annual interest payment made to the owner during the life of the bond[25]. The coupon rate is the rate of interest that, when multiplied by the par value of the bond, provides the dollar value of the coupon return.

[22] See AGO 1999 No. 3

[23] See "The handbook of Fixed Income Securities" by Frank J. Fabozzi et al for a comprehensive reference to fixed income securities. The material in this section draws heavily from this handbook.

[24] Repayment of principal usually occurs at maturity but bonds may be structured such that repayment occurs at different times during the life of the security in which case, the book value is the uncollected portion of the principle. In the examples used in this report the principal is assumed due and paid at maturity unless otherwise stated.

[25] While the periodic coupon payments can be made over any time period during the year (weekly, monthly, quarterly, semiannually, or annually), most bonds issued in the United States pay coupon interest semiannually. The coupon payment is assumed to be annual in this report unless otherwise stated. Valuations are assumed to be at the beginning of the period.

5. Market value – This value is the expected sales price of a fixed income security if it were to be sold at a point in time prior to maturity.
6. Market interest rate – The interest rate or discount rate that results in the present value of the expected cash flow of a fixed income security that is equal to its market value.

Fixed income securities are called fixed because the coupon rate is fixed over the life of the security. For example, for a 10-year $10,000 bond with a coupon rate of 5 percent, the investor pays $10,000 to purchase the bond; the issuer is obligated to pay 5 percent annual rent for the use of the $10,000 or $500 per year for ten years. At the end of the 10 years when the bond matures the investor receives back the principal or par value (in this case $10,000).

A basic rule of fixed income securities is that interest rates[26] and the market value of fixed income securities move in opposite directions. To understand why, suppose an investor purchases the bond described in the example above. Now suppose that market interest rates for this type of security increases to 7 percent immediately after the bond is issued and purchased by the initial investor. A potential fixed income investor can now get $700 per year rent for their $10,000. If the initial investor in this example wants to sell the bond with a coupon return of $500, new investors will not buy it at its original investment value, the bond will sell at a discount. In this example the market value of the bond with a ten-year term remaining and a 5 percent coupon yield will drop to $8,595.28 when interest rates increase to 7 percent.

Assume now our investor takes advantage of the higher interest rates and purchases a second 10-year $10,000 bond with a coupon rate of 7 percent. If the market interest rates goes back down to 5 percent then the market value of the first bond with the coupon return of $500 returns to $10,000, and the market value of the second bond with a remaining live of ten years and a coupon return of $700 will increase in market value to $11,544.35.

Recall that the par value of both bonds is $10,000 so as the two bonds mature their market values will converge at $10,000[27]. This is because as the bonds mature, less and less of the market value is attributable to coupon return and more and more is attributable to the reversion value, which for both bonds is $10,000. Changes in market interest rates will result in much larger changes in market value for bonds with longer remaining lives than for otherwise identical bonds with closer maturity dates.

[26] Often "the" interest rate is referred to as if there is a single market interest rate. However, from the financial markets it is clear that not one but thousands of rates exist at any point in time. Each homogeneous security group with identical maturities has its own interest rate.

[27] The "time path of the market value of a bond" is towards its par value as a bond approaches its maturity date. The market value for a bond selling at a premium or a discount will not remain constant over time. For a bond selling at a discount, as the bond moves toward maturity, its market value will increase assuming the market rate of interest remains constant. For a bond selling at a premium, as the bond moves towards maturity, its market value will fall assuming the market rate of interest remains constant.

The total performance or return on the permanent fund is made up of three parts: coupon, realized capital gains and losses, and price returns where:

a. **Coupon return** is the return associated with the coupon payment on a bond certificate held by the fund. Coupon returns generally are distributed to the beneficiaries of the permanent funds as they are earned.
b. **Realized capital gains and losses** are the return related to either increases or decreases in the principal at the time the bond matures or is sold.
c. **Price return** is the change in market value of bonds held by the fund. Changes in market value are primarily the result of interest rate movements and spread changes, changes in perceived risk and changes in the remaining life of the bond. Price returns are only distributed to beneficiaries if they are realized when the bond is sold prior to its maturity date.

The total performance on the permanent funds is shown in Table 13. The revenues distributed to beneficiaries or beneficiary returns are shown in Table 14.

The major difference between total return shown in Table 13 and beneficiary return shown in Table 14 is the price return, since price returns are not distributed to permanent fund beneficiaries unless the security is sold.

The price return is due to changes in the market value of existing bonds in the fund's portfolio, due primarily to changes in interest rates. Over time as a bond approaches its maturity date, its market value approaches its book value, so price returns are only realized if the bond is sold before its maturity date. If the bond is sold prior to maturity it will be at a premium if current interest rates are lower than the coupon rate but the fund forgoes higher coupon returns in the future that would have been realized had the bond been held to maturity. Bonds may also be sold at a discount in which case, the fund may avoid lower coupon returns in the future.

When the bond is sold at a premium, the difference between the par and market value may be distributed to the beneficiaries and is included in beneficiaries' returns. When a bond is sold at a discount, future earnings must be retained to restore the corpus of the fund. Typically bonds in the permanent funds are held until their maturity and the sales price is equal to the book value of the security, so no adjustment is needed.

During periods when the general level of interest rates is falling as occurred between FY 1993 and 2002, the price return is positive. During periods when the general level of interest rates is rising, the price return will be negative. Over interest rate cycles, gains and losses due to price returns will tend to offset each other.

Usually the market return is used to compare fixed investment with alternative investments, but since price returns are unrealized by the beneficiary, the beneficiary

return is the best measure of return on investment to the beneficiary from the permanent fund.

Actual beneficiary returns on the permanent funds for the 1989 to 2002 period are shown in Table 14. The weighted average rate of return for all funds over this period ranged from a low of 6.1 to a high of 7.8 percent. The average for the period was 6.8 percent.

A major characteristic of the permanent funds is that the permanent fund corpus is fixed in dollar terms and all of the coupon earnings are distributed to beneficiaries. Inflation erodes the purchasing power of the principal portion of the investment so the permanent fund corpus shrinks in purchasing power.

To be a meaningful representation of the real gains to beneficiaries, returns should be adjusted for the loss in purchasing power. Consider an investor who has placed $10,000 in a bond earning a return of 7 percent. At the end of a year the investor has $10,700, a 7 percent increase on the dollar investment. If however, the price level has increased by 3 percent during the year (i.e. 3% inflation), then the net increase in purchasing power of the investment would be 4 percent. The 7 percent return in dollar terms is called the nominal return. The 4 percent increase in purchasing power is called the real return since it measures the real gain in purchasing power of the investment.

By definition, the nominal rate of return equals the real rate of return plus the rate of inflation. If inflation were zero then the real rate and the nominal rate would be the same[28].

To make the return on the permanent funds comparable with the real rate of return on trust land purchases the permanent fund return must be shown in terms of real purchasing power. The loss in purchasing power of the corpus of the trusts due to inflation is shown in table 15. The weighted average loss in purchasing power of the permanent funds over the period was 3.1 percent, resulting in an average real return of 3.7 percent on the permanent funds. See Tables 15 and 16.

[28] See page 149 of "The Handbook on fixed income securities" Edited by Frank J. Fabozzi (1991)

Table 13: Total Nominal Return on Permanent Funds

Fiscal Year	Common School			Normal School			Agricultural			Scientific University			State University		
	Market Value (1)	Total Return (2)	% Total Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)
1993	$143,483,312	$17,648,447	12.3%	$155,520,351	$15,552,035	10.0%	$76,654,905	$7,588,836	9.9%	$94,545,178	$9,643,608	10.2%	$10,126,339	$1,134,150	11.2%
1994	$135,986,988	-$1,767,831	-1.3%	$153,817,225	-$2,307,258	-1.5%	$61,083,717	-$916,256	-1.5%	$93,896,169	-$1,314,546	-1.4%	$11,770,595	-$223,641	-1.9%
1995	$147,231,660	$19,729,042	13.4%	$165,843,807	$21,891,383	13.2%	$80,110,174	$10,814,873	13.5%	$105,683,502	$13,738,855	13.0%	$13,987,442	$1,902,292	13.6%
1996	$144,516,942	$7,514,881	5.2%	$165,624,758	$8,943,737	5.4%	$82,566,672	$4,458,600	5.4%	$110,700,428	$5,756,422	5.2%	$15,307,135	$780,664	5.1%
1997	$148,109,105	$12,441,165	8.4%	$171,403,342	$14,569,284	8.5%	$87,810,612	$7,551,713	8.6%	$120,190,810	$10,216,219	8.5%	$17,692,585	$1,486,177	8.4%
1998	$159,117,875	$17,662,084	11.1%	$183,078,295	$20,138,612	11.0%	$96,160,575	$10,385,342	10.8%	$132,825,066	$14,477,932	10.9%	$19,868,113	$2,125,888	10.7%
1999	$155,648,356	$4,046,857	2.6%	$179,551,987	$4,309,248	2.4%	$115,712,026	$2,661,377	2.3%	$135,750,715	$3,122,266	2.3%	$20,703,461	$600,400	2.9%
2000	$150,561,597	$5,570,779	3.7%	$182,122,729	$7,467,032	4.1%	$114,702,972	$4,588,119	4.0%	$136,270,029	$5,041,991	3.7%	$21,156,883	$867,432	4.1%
2001	$159,938,107	$17,433,254	10.9%	$191,744,451	$21,667,123	11.3%	$137,133,711	$15,770,377	11.5%	$145,958,936	$15,763,565	10.8%	$22,342,090	$2,502,314	11.2%
2002	$163,486,502	$13,732,866	8.4%	$201,486,521	$18,939,733	9.4%	$140,810,235	$11,828,060	8.4%	$154,847,124	$15,639,560	10.1%	$23,769,889	$2,424,529	10.2%
Average FY 1993-02		$11,401,155	7.5%		$13,117,093	7.4%		$7,473,104	7.3%		$9,208,587	7.3%		$1,360,021	7.6%

(1) Market Value at end of Fiscal Year Source : Washington State Investment Board

(2) Total Return is calculated by multiplying (1) times (3)

(3) Percent Total Performance Return Source: Washington State Investment Board (unavailable prior to 1993) Negative returns to all the permanent funds in FY 1994 are the result of negative price returns that year.

Table 14: Beneficiary Nominal Return on Permanent Funds

	Common School			Normal School			Agricultural			Scientific University			State University		
Fiscal Year	Market Value (1)	Distri-bution (2)	% Distri-bution Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)	Market Value (1)	Total Return (2)	% Total Return (3)
1989	$115,376,000	$7,668,402	6.9%	$109,893,000	$8,865,207	8.4%	$53,006,000	$4,077,224	8.2%	$68,970,000	$5,191,078	7.9%	8,087,000	589,446	7.5%
1990	$119,060,000	$7,964,369	6.8%	$131,534,000	$9,957,694	8.2%	$64,289,000	$4,617,987	7.9%	$76,929,000	$5,839,015	8.0%	8,702,000	624,525	7.4%
1991	$124,250,000	$8,207,628	6.7%	$134,886,000	$11,041,258	8.3%	$65,826,000	$5,323,010	8.2%	$81,609,000	$6,164,261	7.8%	8,989,000	696,750	7.9%
1992	$143,062,000	$7,282,056	5.4%	$155,084,000	$11,257,092	7.8%	$76,440,000	$5,347,583	7.5%	$94,257,000	$6,230,945	7.1%	10,106,000	682,050	7.1%
1993*	$143,483,312	$7,614,864	5.3%	$155,520,351	$10,333,045	6.7%	$76,654,905	$5,048,219	6.6%	$94,545,178	$5,792,586	6.1%	10,126,339	665,712	6.6%
1994	$135,986,988	$7,038,843	5.0%	$153,817,225	$10,572,131	6.8%	$61,083,717	$5,006,620	7.3%	$93,896,169	$5,812,828	6.2%	11,770,595	714,681	6.5%
1995	$147,231,660	$7,540,482	5.3%	$165,843,807	$10,794,752	6.8%	$80,110,174	$5,097,626	7.2%	$105,683,502	$6,120,451	6.1%	13,987,442	787,716	6.1%
1996	$144,516,942	$9,441,492	6.5%	$165,624,758	$10,958,692	6.6%	$82,566,672	$5,368,338	6.6%	$110,700,428	$6,749,740	6.2%	15,307,135	924,623	6.3%
1997	$148,109,105	$9,478,931	6.5%	$171,403,342	$11,242,941	6.7%	$87,810,612	$5,701,994	6.7%	$120,190,810	$7,193,285	6.2%	17,692,585	1,036,699	6.3%
1998	$159,117,875	$10,186,752	6.6%	$183,078,295	$11,629,742	6.6%	$96,160,575	$6,054,688	6.6%	$132,825,066	$8,088,026	6.4%	19,868,113	1,264,470	6.7%
1999	$155,648,356	$9,559,564	6.1%	$179,551,987	$11,300,920	6.2%	$115,712,026	$6,093,168	5.8%	$135,750,715	$8,079,197	6.0%	20,703,461	1,332,378	6.6%
2000	$150,561,597	$10,009,368	6.5%	$182,122,729	$12,106,162	6.7%	$114,702,972	$8,008,818	7.0%	$136,270,029	$8,749,188	6.4%	21,156,883	1,477,190	7.1%
2001	$159,938,107	$10,138,570	6.5%	$191,744,451	$12,671,271	6.8%	$137,133,711	$8,519,134	6.8%	$145,958,936	$9,881,340	7.0%	22,342,090	1,521,838	7.0%
2002	$163,486,502	$10,197,078	6.3%	$201,486,521	$12,358,504	6.3%	$140,810,235	$8,978,510	6.5%	$154,847,124	$9,861,488	6.6%	23,769,889	1,452,790	6.3%
Average FY 1989-02		**$8,737,743**	**6.2%**		**$11,077,815**	**7.1%**		**$5,945,923**	**7.0%**		**$7,125,245**	**6.7%**		**$983,633**	**6.8%**

(1) Market Value at end of Fiscal Year Source : Washington State Investment Board

(2) Distribution to Beneficiaries Source; Washington State Investment Board

(3) Calculated by dividing distributions by the average of beginning and ending market value for the period

*Note: Prior to 1993, market value figures were rounded to the nearest thousand dollars.

Table 15: Loss in Purchasing Power and Beneficiary Real Return on Permanent Funds

Fiscal Year	Consumer Price Index (1)	% loss in purchasing power (2)	Common School			Normal School			Agricultural			Scientific University			State University			All Permanent Funds		
			Loss in Purchasing Power (3)	Nominal Return (4)	Real Return (5)	Loss in Purchasing Power (3)	Nominal Return (4)	Real Return (5)	Loss in Purchasing Power (3)	Nominal Return (4)	Real Return (5)	Loss in Purchasing Power (3)	Nominal Return (4)	Real Return (5)	Loss in Purchasing Power (3)	Nominal Return (4)	Real Return (5)	Loss in Purchasing Power (3)	Nominal Return (4)	Real Return (5)
1989	124.1	-5.2%	-$5,760,468	6.9%	1.7%	-$5,439,132	8.4%	3.3%	-$2,583,660	8.2%	3.0%	-$3,389,248	7.9%	2.7%	-$403,608	7.5%	2.4%	-$17,576,116	7.8%	2.6%
1990	129.9	-4.7%	-$5,478,359	6.8%	2.1%	-$5,641,727	8.2%	3.6%	-$2,740,979	7.9%	3.2%	-$3,409,405	8.0%	3.3%	-$392,330	7.4%	2.8%	-$17,662,799	7.7%	3.0%
1991	136.0	-4.7%	-$5,712,821	6.7%	2.1%	-$6,255,435	8.3%	3.6%	-$3,055,048	8.2%	3.5%	-$3,722,409	7.8%	3.1%	-$415,378	7.9%	3.2%	-$19,161,091	7.7%	3.0%
1992	140.2	-3.1%	-$4,127,612	5.4%	2.4%	-$4,477,478	7.8%	4.7%	-$2,196,754	7.5%	4.4%	-$2,715,578	7.1%	4.0%	-$294,849	7.1%	4.1%	-$13,812,271	6.9%	3.8%
1993*	144.4	-3.0%	-$4,292,048	5.3%	2.3%	-$4,652,419	6.7%	3.7%	-$2,293,148	6.6%	3.6%	-$2,827,993	6.1%	3.1%	-$303,052	6.6%	3.6%	-$14,368,660	6.1%	3.1%
1994	148.0	-2.5%	-$3,483,702	5.0%	2.5%	-$3,856,009	6.8%	4.3%	-$1,716,963	7.3%	4.8%	-$2,348,992	6.2%	3.7%	-$272,953	6.5%	4.0%	-$11,678,619	6.2%	3.7%
1995	152.5	-3.0%	-$4,305,689	5.3%	2.3%	-$4,859,712	6.8%	3.7%	-$2,146,529	7.2%	4.2%	-$3,034,150	6.1%	3.1%	-$391,592	6.1%	3.1%	-$14,737,671	6.3%	3.2%
1996	156.7	-2.8%	-$4,017,522	6.5%	3.7%	-$4,564,485	6.6%	3.9%	-$2,240,140	6.6%	3.8%	-$2,979,713	6.2%	3.5%	-$403,401	6.3%	3.6%	-$14,205,261	6.5%	3.7%
1997	160.3	-2.3%	-$3,361,371	6.5%	4.2%	-$3,871,414	6.7%	4.4%	-$1,957,110	6.7%	4.4%	-$2,652,229	6.2%	3.9%	-$379,065	6.3%	4.0%	-$12,221,189	6.5%	4.2%
1998	163.0	-1.7%	-$2,587,376	6.6%	4.9%	-$2,985,341	6.6%	4.9%	-$1,549,352	6.6%	4.9%	-$2,130,826	6.4%	4.7%	-$316,325	6.7%	5.0%	-$9,569,221	6.6%	4.9%
1999	166.2	-2.0%	-$3,089,730	6.1%	4.1%	-$3,559,561	6.2%	4.3%	-$2,079,731	5.8%	3.8%	-$2,636,327	6.0%	4.1%	-$398,249	6.6%	4.6%	-$11,763,597	6.1%	4.1%
2000	172.4	-3.7%	-$5,711,497	6.5%	2.8%	-$6,746,039	6.7%	3.0%	-$4,297,753	7.0%	3.2%	-$5,073,792	6.4%	2.7%	-$780,789	7.1%	3.3%	-$22,609,870	6.7%	2.9%
2001	178.0	-3.2%	-$5,042,919	6.5%	3.3%	-$6,072,089	6.8%	3.5%	-$4,090,155	6.8%	3.5%	-$4,583,765	7.0%	3.8%	-$706,480	7.0%	3.7%	-$20,495,407	6.8%	3.5%
2002	179.9	-1.1%	-$1,726,143	6.3%	5.2%	-$2,098,705	6.3%	5.2%	-$1,483,409	6.5%	5.4%	-$1,605,426	6.6%	5.5%	-$246,103	6.3%	5.2%	-$7,159,785	6.4%	5.3%
Average FY 1989-02		**-3.1%**	**-$4,192,661**	**6.2%**	**3.1%**	**-$4,648,539**	**7.1%**	**4.0%**	**-$2,459,338**	**7.0%**	**4.0%**	**-$3,079,275**	**6.7%**	**3.7%**	**-$407,441**	**6.8%**	**3.8%**	**-$14,787,254**	**6.7%**	**3.7%**

(1) Consumer Price Index All Urban Consumers - (CPI-U) U.S. city average All items 1982-48=100 end of Fiscal Year (June)U.S. Department Of Labor, Bureau of Labor Statistics, Washington, D.C. 20212

(2) Percentage change in CPI equal to the percentage loss in purchasing power in a dollar denominated assets

(3) Calculated by multiplying the average balance for the period by the percentage loss in purchasing power for the period

(4) From Table E

(5) Real Rate can be calculated two ways by subtracting the loss in purchasing power from the beneficiary earnings and dividing by the average fund balance for the period or by subtraction the percentage loss in purchasing power from the percentage distribution for the period.